

REMARKS

Claims 1-20 were previously pending in the application. Claims 3, 8, 13, 16 and 18-20 are cancelled leaving claims 1-2, 4-7, 9-12, 14-15 and 17 for consideration.

Claim 1 is amended to include the subject matter of claim 3 and provides that a particle size distribution is in the range of 2 micrometers to 20 micrometers.

As disclosed on page 15, lines 5-10 of the present application, an object of the present invention is to provide an electric double layer capacitor which has an increased capacity and a reduced equivalent series resistance. The increased capacity is obtained by controlling the particle size distribution in a narrow range of 2 micrometers to 20 micrometers. The recited range also increases the density of the unit volume activated carbon, which in turn reduces the contact resistance between activated carbons and causes a low equivalent series resistance.

The position set forth in the Official Action is that TSUCHIYA et al. disclose an average particle diameter of the activated carbon particles of 18.6 micrometers but that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the recited average diameter in order to reduce the thickness of the diameter of the carbon particles.

However, the reasoning set forth in the Official Action is not supported by TSUCHIYA et al. Specifically, column 4, lines 60-65 of TSUCHIYA et al. show a table wherein the average diameter of 20 micron particles has a density of  $0.61 \text{ g/cm}^3$  and the average diameter of 5 micron particles has a density of  $0.82 \text{ g/cm}^3$ .

TSUCHIYA et al. choose a specific 10:1 ratio of the 20 micron particles to the 5 micron particles in order achieve a sintered polarized electrode having a density of  $0.64 \text{ g/cm}^3$ . As set forth on column 6, lines 3-6 of TSUCHIYA et al., the sintered polarized electrode is small in internal resistance without greatly affecting the energy density thereof.

Accordingly, TSUCHIYA et al. teach decreasing the internal resistance without affecting the density. Therefore, one of ordinary skill in the art would not be motivated to choose a recited range of 5-13 micrometers because such range would significantly increase the density of TSUCHIYA et al.

MPEP §2143.01 states that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In *re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Modifying TSUCHIYA et al. as suggested in the Official Action to be within the range of 5-13 micrometers would significantly increase the density of TSUCHIYA et al. Since the

object of TSUCHIYA et al. is to keep the density as close as possible to that obtained by the 20 micrometer particles, which results in an average diameter of 18.6 micrometers, the recited 5-13 micrometers would render TSUCHIYA et al. unsatisfactory for its intended purpose. Therefore, there is no suggestion or motivation to make the proposed modification.

Claims 6, 11 and 17 are rejected as unpatentable over TSUCHIYA et al. in view of FONG et al. 5,069,683. This rejection is respectfully traversed.

Claim 6 is amended to include the subject matter of claim 8 and provides that an average diameter of the activated carbon particles is in the range from 5-13 micrometers and a particle size distribution thereof is in the range of 2-20 micrometers.

As set forth above with respect to claim 1, TSUCHIYA et al. do not teach or suggest this limitation. FONG et al. is only cited for the teaching of a density between 1.4 g/cm<sup>3</sup> and 1.8 g/cm<sup>3</sup>. FONG et al. do not teach or suggest the recited average particle diameter or the recited particle size distribution of claim 6.

In addition, as set forth above, any teaching to increase the density of TSUCHIYA et al. would render TSUCHIYA et al. unsatisfactory for its intended purpose. Accordingly, the proposed combination of references not only does not teach or suggest the recited average particle diameter or the particle

size distribution thereof but, the proposed combination of references would render TSUCHIYA et al. unsatisfactory for its intended purpose and thus there is no suggestion or motivation to make the proposed modification.

Claim 2 is rejected as unpatentable over TSUCHIYA et al. in view of ANDELMAN 6,127,474. This rejection is respectfully traversed.

ANDELMAN is only cited for the teaching of an electrode having a resistance in the range of 1 ohm cm to 10 ohm cm. ANDELMAN does not teach or suggest what is recited in claim 1. As set forth above, TSUCHIYA et al. do not disclose or suggest what is recited in claim 1. Since claim 2 depends from claim 1 and further defines the invention, the proposed combination of references would not render obvious claim 2.

Claims 4 and 5 are rejected as unpatentable over TSUCHIYA et al. in view of GAN et al. 6,171,729. This rejection is respectfully traversed.

GAN et al. is only cited for the teaching that a binder contains materials such as fluoro-polymer and polyvinylidene fluoride. GAN et al. do not teach or suggest what is recited in claim 1. As set forth above, TSUCHIYA et al. do not disclose or suggest what is recited in claim 1. Since claims 4 and 5 depend from claim 1 and further define the invention, the proposed combination of references would not render obvious claims 4 and 5.

Claims 7, 12 and 18 are rejected as unpatentable over TSUCHIYA et al. in view of FONG et al. and further in view of ANDELMAN. This rejection is respectfully traversed.

ANDELMAN is only cited for the teaching of an electrode resistance between 1 and 10 ohm cm. ANDELMAN does not teach or suggest what is recited in claims 6 or 11. As set forth, TSUCHIYA et al. in view of FONG et al. do not disclose or suggest what is recited in claims 6 or 11. Since claims 7 and 12 depend from claims 6 and 11, respectively, and further define the invention, the proposed combination of references would not render obvious claims 7 and 12.

Claims 9, 10, 14 and 15 are rejected as unpatentable over TSUCHIYA et al. in view of FONG et al. and further in view of GAN et al. This rejection is respectfully traversed.

GAN et al. is only cited for the teaching of a binder that contains materials such as fluoro-polymer and polyvinylidene fluoride. GAN et al. do not teach or suggest what is recited in claims 6 and 11. As set forth above, TSUCHIYA et al. in view of FONG et al. do not teach or suggest what is recited in claims 6 and 11. Since claims 9 and 10 depend from claim 6 and since claims 14 and 15 depend from claim 11 and further define the invention, the proposed combination of references would not render obvious claims 9, 10, 14 and 15.

None of the cited references, either alone or in combination, recognize controlling a particle size distribution

in a narrow range to increase the electrode density. In fact, the primary reference to TSUCHIYA et al. teaches the opposite such that the electrode density is maintained substantially the same for a composition with 20 micron particles and 5 micron particles as it is for that of 20 micron particles alone.

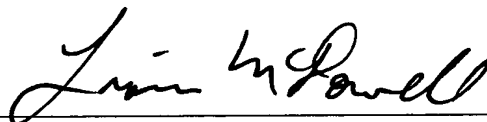
Accordingly, claims 1, 6 and 11 as presently amended are believed to distinguish over the cited prior art.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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